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Internet Exchange News

Transporting Messages Across the Internet via the Internet Exchange BSMTP Module

Most electronic mail (e-mail) is directly transported via SMTP (Simple Mail Transfer Protocol), but there are times when messages are transported across non-SMTP transports.

Internet Exchange Messaging Server includes a built-in BSMTP (Batch Simple Mail Transfer Protocol) module that supports the tunneling of e-mail across non-SMTP transports. The BSMTP comes with a POP3 (Post Office Protocol version 3) Encoder and Decoder that performs the encoding and decoding of BSMTP format messages. It supports UIDL (Unique ID Listing) and provides an option for the system administrator to specify the maximum number of messages per POP3 session.

BSMTP Encoder and Decoder

The Internet Exchange BSMTP Encoder encapsulates messages into a new BSMTP format before delivering the messages to its destination address. This destination address can be within the Internet Exchange Messaging Server or any other messaging server with a POP3 server installed. The BSMTP Decoder, meanwhile, decodes messages before submitting them into the Internet Exchange Input Queue for further routing. Once messages are submitted to the Input Queue, they are treated just like the rest of the messages that were received via SMTP.

UIDL Support

The Internet Exchange BSMTP module contains an added mechanism to handle poor dial-up connections. During a dialup session, the connection may be terminated abruptly because of a poor Internet connection. With this, the POP3 server may not be able to remove those messages which have been acknowledged and marked as `Deleted`. One way of handling

(See **Transporting Messages...** *on p. 2)*

IMA to release Internet Exchange Messaging Server 5.0

International Messaging Associates (IMA) announces the release of its latest e-mail solution, the Internet Exchange Messaging Server 5.0. This complete messaging solution contains valuable features from its previous messaging software releases. Some of these features include user-friendly interface, mailing list management, filtering and vacation utility, disk quota management, file attachment handling and support, and web mail client.

Internet Exchange 5.0 now runs on both the Windows and Linux platform. Beta release of this software will be available in the beginning of January and the official copy early next year.

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(cont'd. from p. 1)

this problem is by maintaining a database of UIDL for each message to synchronize the downloaded messages between the POP3 client and server.

Maximum Number of Messages per POP3 Session

The Internet Exchange BSMTP module also provides an option for the system administrator to specify a maximum number of messages to be downloaded per POP3 session. After the POP3 client has downloaded the maximum number of messages from the server, it will issue the `QUIT` command to end the current session. The POP3 server will update and remove deleted messages from the maildrop. A new POP3 session will start to download the rest of the messages until all the messages from the POP3 server have been downloaded.

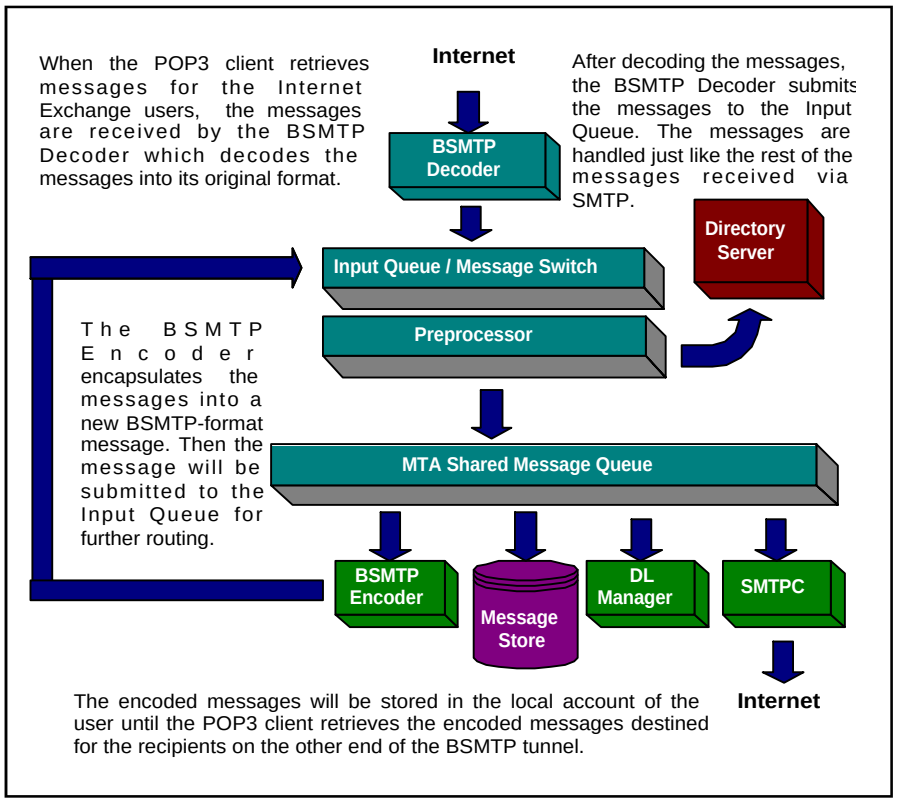

Figure: Encoding and Decoding Process

Message Flow

When the Internet Exchange Messaging Server receives messages through the SMTPD module, it submits the messages to the Input Queue. The Input Queue delivers the messages to the Preprocessor module. If the Preprocessor determines that a message is destined to a recipient on the other end of a BSMTP tunnel, the BSMTP Encoder encapsulates the message together with its envelope information into a new BSMTP format message. Then, the BSMTP Encoder sends the message to the Input Queue for further routing (see **Figure** above). From the Input Queue, the message will be delivered to the Preprocessor, which performs pre-processing tasks on the messages before submitting them to the Shared Message Queue, where the messages will be fetched by their respective output channels. The output channels will eventually deliver the messages to the mailboxes of the intended recipients.

On the receiving side, when the POP3 client downloads BSMTP-decoded messages destined for Internet Exchange users, the BSMTP Tunnel Decoder decodes the message back to its original message file format and envelope information. After decoding the message, the BSMTP Tunnel Decoder submits the message to the Internet Exchange Input Queue for further routing (see **Figure** above). When the message is submitted to the Input Queue, it is treated just like any other message that was received via SMTP. The appropriate pre-processing and message routing tasks are performed by the Internet Exchange MTA before the messages are delivered to the mailboxes of the intended users.

More references regarding the BSMTP module can be found at the following web sites:

- *http://www.ima.com/product/v4/bsmtp/ bsmtp.pdf*
  (Batch SMTP Tunnel Module Summary)
- *http://www.ima.com/pdf/adminman2.pdf*
  (Internet Exchange Messaging Server Administrator Guide)
- *http://www.ima.com/pdf/ienews/vol2no8.pdf*
  (Internet Exchange 4's Batch SMTP Module: Providing a reliable alternative to SMTP for dial-up connected sites)
- *http://www.ima.com/pdf/ienews/vol3no5.pdf*
  (Enhanced Batch SMTP Module Addresses Poor Internet Connections)

Highlight of the Month

Prioritizing the Delivery of Messages: SMTPC's message handling approach

The efficiency of any messaging system depends largely on how it manages the delivery of messages, particularly, how it carries out the message priority handling process. In large business setups, the bulk of electronic correspondence sent everyday—which is a combination of business-related and personal e-mail—requires that an enterprise messaging system should have the ability to determine which messages should be transacted first or given priority. Internet Exchange Messaging Server has this capability.

Internet Exchange, a full-featured messaging solution, handles messages using its SMTPC (Simple Mail Transfer Protocol Client). Activating the SMTPC queue management feature allows the system administrator to schedule and prioritize the delivery of business-related messages over personal mail based on the domain name. For example, all outgoing messages destined for personal e-mail accounts can be queued for later delivery and processed after an hour. This is done in Internet Exchange by simply following this procedure:

1. Go to the SMTPC Queue Management interface (see **Figure 1** below), then click the ***SMTP Domain Profile*** button. The "Peer Domains" page appears. Press the ***New*** button (see **Figure 2** on page 4).

2. On the Peer Domain attribute add the domain name (e.g. ima.com).

3. Tick the box for Queue mail before attempting delivery and change the Queue run interval to 10 minutes.

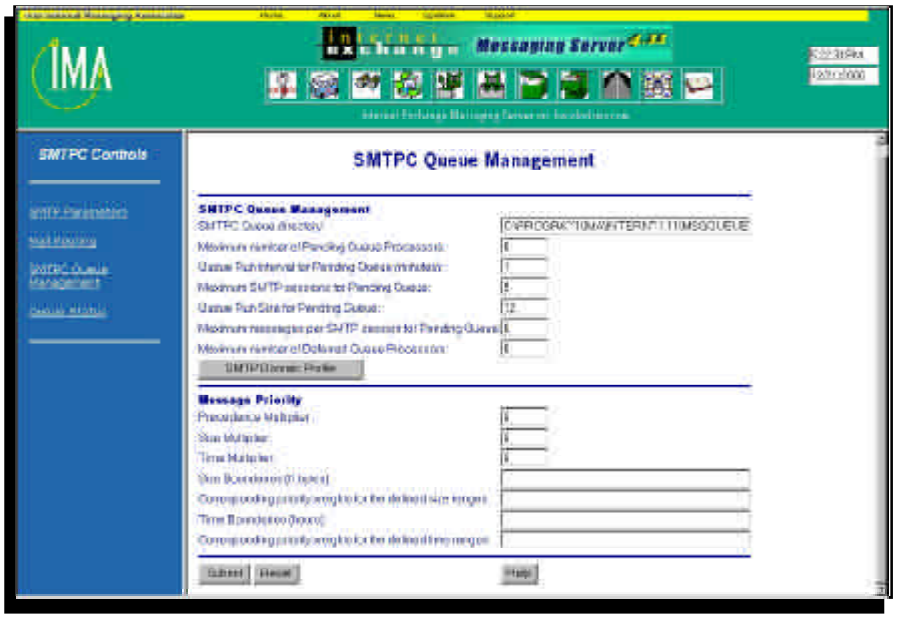

Figure 1: SMTPC Queue Management interface

Putting mail on queue before attempting delivery enables Internet Exchange to process messages efficiently by utilizing system resources only when needed. The queue run interval determines how long the Pending Queue Processor should check for pending messages. The value, which is expressed in minutes, is set arbitrarily. The system administrator can freely determine this value.

Complementing its queuing strategy feature, Internet Exchange also provides a mechanism for message priority handling based on the calculated message priority weight. The priority weight assigned to a message is based on three factors, namely:

- the pre-defined message precedence (a pre-defined value assigned before a message is imported to the SMTPC)
- the message size
- the total deferred time (for messages in the Deferred Queue)

This is calculated using the formula:

Priority Weight = (precedence * *Mp*) + (size * *Ms*) + (deferred_time * *Md*)

Mp refers to the *precedence multiplier* which specifies the multiplier value for the precedence factor. *Ms* refers to the *size multiplier* which specifies the multiplier value for the size factor. *Md* refers to the *time multiplier* which specifies the multiplier value for the time factor.

(see* Highlight *on p.4)

Highlight
(cont'd. from p.3)

The multiplier values specify how important a factor is relative to the other factors. It is an integer value and has a default value of 0, which means that the factor will not be taken into account in prioritizing a message.

Figure 2: Adding a Peer Domain

The multiplier values are arbitrary. That is, if the system administrator thinks that size is twice more important than deferred time in prioritizing messages, then he can assign 2 to "size multiplier" and 1 to "time multiplier".

Priority weight is also dependent on size and time boundaries where messages are given classification. How messages are classified and how the priority weights are assigned to each range in the classification is totally up to the system administrator.

To illustrate, *Size Boundaries*, expressed in *K bytes*, classify messages into different ranges based on size property. The defined ranges are then assigned different priority weights.

For example, the boundaries can cover four ranges of sizes:

- sizes less than 1K (>10)
- sizes between 10K and 1,000K
- sizes between 1,000K and 10,000K
- sizes larger than 10,000K (>10,000)

These size ranges can then be given corresponding priority weights, such as:

Assign 0 to (<10) range
Assign 2 to (10,1000) range
Assign 4 to (1000,10000) range
Assign 10 to (>10000) range

Similarly, *Time Boundaries*, which are expressed in *hours* and classify messages into different ranges based on the deferred time attributes, can also be assigned different priority weights.

For example, the boundaries can cover four ranges of deferred time:

- deferred time shorter than 1 hour (<1)
- deferred time between 1 hour and 6 hours (1, 6)
- deferred time between 6 hours and 12 hours (6, 12)
- deferred time longer than 12 hours (>12)

These time ranges can then be given corresponding priority weights, such as:

Assign 1 to (<1) range
Assign 4 to (1, 6) range
Assign 6 to (6, 12) range
Assign 20 to (>12) range

As in the case of the multiplier values, it is also totally up to the system administrator to classify messages and assign the relative priority weights to them. Configuration is done via the SMTPC queue management interface (**Figure 1**).

Usually, the connotation is that the effect of message size and deferred time on message priority is different. Size has a negative effect, while deferred time has a positive effect. Thus, internally, the value of size is negated. A message with a larger size should be processed later, and should have a higher priority value. A message with a longer deferred time should be processed sooner and should have a lower priority weight. A message that has a low priority weight value earns a higher priority level and thus, gets processed sooner.

All these features ensure that messages, especially important business related correspondence, get delivered on time, efficiently. Internet Exchange, with its queue management and message priority handling capabilities, truly is an indispensable business tool.

Questions & Answers

Q: While I was editing some of our Message Store users' account information, I accidentally deleted the mail account of user@ima.com. I need to restore this account. How do I do this? What utilities will I need? If its of any help, I have a complete backup copy of the Message Store directory.

A: Yes, you can restore the deleted mail account of user@ima.com in the Message Store. To do this, you will need the Internet Exchange rebuild utility (**rebuild.exe**) found in the *C:\Program\Files\IMA\Internet Exchange Messaging Server* directory. With this in hand, follow the steps below:

1. Re-create the deleted mail account in the Message Store.

2. Close all the components of the Internet Exchange Messaging Server.

3. Copy the backup files (user's directory) in the new directory of that user account.

4. In the command prompt, run the rebuild by typing:

   ```
   Rebuild user@ima.com
   ```

   This will rebuild all mailboxes of user@ima.com

Q: We have upgraded our messaging server from 4.1 to 4.11. The installation of the 4.11 update was successful. However, while the system was running, I have observed that messages keep piling up in the SMTPC Queue. It seems that the SMTPC cannot send the messages. I checked the log file and found this error:

```
SMTPC:[Error] The SMTPC Message database is not
in the new(4.11) format, please run DBUPDATE.EXE
to update the database.
```

I tried to solve the problem by following the instruction given in the error message. I run the DBUPDATE utility by typing DBUPDATE in the Internet Exchange directory. But this only lead to another error:

```
Failed to create new message database
C:\Program Files\IMA\Internet Exchange Messaging Server 4
\MsgQueue\SMTPC\mesg.tmp, #error=25
```

How can I solve this problem?

A: The SMTPC message database stores the envelope information and status of the messages stored in the SMTPC Queue. The SMTPC accesses this to get information necessary to send its messages to the

(see **Questions & Answers** *on p.6)*

This Month'sTip

Limiting Message Store Users' Disk Usage

The Internet Exchange Message Store Quota Agent allows the system administrator to limit Message Store users' disk usage. The system administrator has the option to define a default disk quota for all future Message Store users, or to define a different disk quota for individual Message Store users.

Defining a default disk quota means the system administrator need not set the disk quota every time he creates a new user account. Setting the default quota via the "Configure Quota Agent" interface will not affect the disk quota of existing Message Store users. To set the default disk quota, do the following:

1. Go to the "System Administrator Message Store" interface and click the `Configure Quota Agent` link.
2. The "Quota Agent" screen with its current settings will appear. Click the ***Change Setting*** button.
3. On the "Quota Agent Setting" interface, enter the desired default disk quota (e.g. 10) in the textbox provided beside the `Default size of User Account` field. Click the ***Update*** button.

To set a different disk quota, do the following:

1. On the "System Administrator Message Store" interface, click on the `Find User` link.
2. The "Find User" web page will appear. On this page, type in the details of the user (i.e., first name, last name, e-mail address) whose disk quota you wish to modify, then click the ***Submit*** button.
3. The "User Details" page will be displayed. Click on the user's link to see the current settings of the Message Store account in the "Personal User Information" page. To modify the current settings, click the ***Edit*** button.
4. On the "User Information" page, enter the desired disk quota in the textbox provided beside the `Disk Quota` field. Afterwards, click the ***Update*** button.

Questions & Answers
(cont'd. from p. 5)

Internet. If the SMTPC fails to do this, it cannot send its messages to the Internet.

The error "`The SMTPC Message database is not in the new (4.11) format, please run DBUPDATE.EXE to update the database`" is generated when the current SMTPC cannot access the SMTPC message database in the system because of incompatibility in database format. This leads to SMTPC's inability to send messages to the Internet, which further results in message pile up in the SMTPC Queue.

To solve this problem, you have to convert the current SMTPC message database to the format recognized by the SMTPC 4.11. To do so, follow these steps:

1. Shut down Internet Exchange Messaging Server 4.11.

2. Open command prompt (MS-DOS).

3. Go to the Internet Exchange Directory and type `dbupdate -u`. This will update the format of the SMPTC queue message database from 4.1 to 4.11.

4. Since the 4.1 SMTPC message database is inaccessible to the SMTPC, the envelope and status information of the new messages that entered the SMTPC Queue were not added to the SMTPC message database, which resulted to the SMTPC Queue and the SMTPC message database not synchronized. To synchronize the SMTPC Queue and SMTPC message database, type `dbupdate -r` in the Internet Exchange directory. This will rebuild the SMTPC queue message database to include the envelope information of all the messages in the SMTPC Queue.

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Please send your comments and suggestions to doc@ima.com

"Progress is wonderful, isn't it? In earlier times when offspring needed money, they either wrote home or telephoned collect. Now they e-mail."

— Anon